

REMARKS

STATUS OF CLAIMS

Claims 1-9 are pending.

Claims 1-9 are pending in this application, claim 1 being the independent claim.

Claims 1-2 and 5-9 stand rejected under 35 U.S.C. 102(b) as being anticipated by Wong, U.S. Patent No. 5,285,516. In addition, claim 3 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Wong in view of Gleason et al., U.S. Patent No. 4,557,557. Finally, claim 4 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Wong in view of Sahinci et al., U.S. Patent No. 6,478,482. These rejections as they apply to the pending claims are hereby traversed for at least the following reasons.

Claim 1 has been amended above to clearly point out that it is the end *faces* of the optical fibers that are arranged so that they face one another in close proximity and which are subsequently laterally offset and fused together (see for example, FIG. 1).

In accordance with the present invention as now set forth in claim 1, a method is provided that begins by arranging a first end face of a first optical fiber and a second end face of a second optical fiber so that they face one another in close proximity. The first and second end faces of the optical fibers are then laterally offset from one another and the first end face of the first fiber is fused to the second end face of the second fiber to create a fusion splice. Next, the attenuation imposed on an optical signal transmitted from the first to the second optical fiber and through the fusion splice is measured to determine an initial deviation in attenuation from a prescribed value. The fusion splice is then re-fused while exerting an axially directed force on the first and second end faces of the optical fiber. The measurement step is repeated to determine a subsequent deviation in attenuation from the prescribed value and the re-fusion step is repeated to reduce the subsequent deviation in attenuation. If necessary, this process is repeated until a resulting deviation in attenuation falls within a prescribed tolerance.

Wong, U.S. Patent No. 5,285,516, relates to a method for fabricating an optical attenuator. As shown in FIG. 3 of the patent the fibers are arranged so that they overlap one another prior to fusing. Accordingly, optical signals traversing the resulting fusion splice do so by evanescent coupling (i.e., coupling in which a portion of the optical

energy "leaks" through the interface between the fiber core and the cladding of one fiber to another via an evanescent field that essentially decays exponentially with the distance from the core-cladding interface) By contrast, in the present invention the end faces of the fibers are fused to one another, resulting in a butt-coupled arrangement in which evanescent coupling is avoided. This distinction is reflected in claim 1 by reciting, *inter alia*, that the first and second end faces are arranged to face one another (step a) and that the first end face is fused to the second end face (step c). Wong fails to disclose at least both these requirements of claim 1.

The present invention achieves a number of advantages by eliminating the need for evanescent coupling as employed in Wong. For example, in the present invention the optical fibers are initially completely aligned so tha the attenuation of the resulting attenuator can go as low as 0 dB. In Wong, on the other hand, because the fibers must initially overlap one another, there is a minimum, nonzero attenuation below which the resulting attenuator cannot go. As another example, the temperature and wavelength dependency of the inventive attenuator is reduced in comparison to Wong because of the significant temperature and wavelength dependency of evanescent coupling. Thus, the present invention can achieve better tolerances than can be achieved by the attenuator disclosed by Wong.

In summary, Wong fails to disclose the steps of *arranging a first end face of a first optical fiber and a second end face of a second optical fiber so that they face one another in close proximity and fusing the first end face of the first fiber to the second end face of the second fiber to create a fusion splice*. Moreover, neither Gleason et al. nor Sahinci et al. overcome this deficiency in the Wong reference. Accordingly, for at least these reasons it is respectfully requested that the rejection of independent claim 1 under 35 U.S.C. 102(b) be reconsidered and withdrawn. The rejection of the pending dependent claims under 35 U.S.C. 102(b) and 103(a) should also be reconsidered and withdrawn since these claims depend from and further define the invention of claim 1.

Conclusion

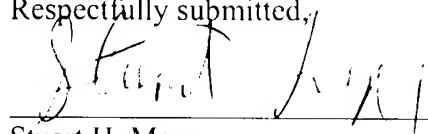
In view of the foregoing, it is believed that the application is now in condition for allowance and early passage of this case to issue is respectfully requested. If the

Examiner believes there are still unresolved issues, a telephone call to the undersigned would be welcomed.

Fees

If there are any fees due and owing in respect to this amendment, the Examiner is authorized to charge such fees to deposit account number 50-1047.

Respectfully submitted,



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